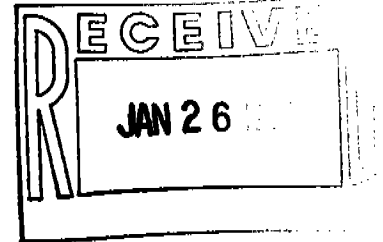




ENGINEERING CONSULTING SERVICES, LTD.
Geotechnical • Construction Materials • Environmental

January 14, 1998

Mr. John Nantz
Guilford County Division of Environmental Health
1100 East Wendover Avenue
Greensboro, NC 27405



Subject: **Underground Storage Tank Closure Report
Longview Golf Course
6321 Ballinger Road
Greensboro, North Carolina
ECS Project G-1861**

Dear Mr. Nantz:

On behalf of the Piedmont Triad Airport Authority, Engineering Consulting Services, Ltd. (ECS) is submitting this Underground Storage Tank Closure Report for the subject site. Included in this report is a description of the field activities, the results obtained, and our conclusions and recommendations.

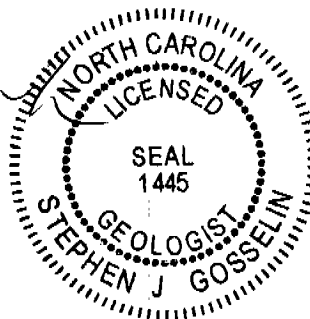
This closure report has been prepared in general accordance with the Underground Storage Tank Closure Report guidelines presented in the GW/UST-12 form dated October 1994. We appreciate your consideration and cooperation in the submission of this report.

Sincerely,

ENGINEERING CONSULTING SERVICES, LTD.

Sania V. Werner
Project Geologist

Stephen J. Gosselin, L.G.
Principal Geologist
Licensed, NC#1445



Attachments

5-C Dundas Circle, Greensboro, NC 27407 • (910) 856-7150 • Fax (910) 856-7160

Offices: Washington, DC; Baltimore, MD; Frederick, MD; Richmond, VA; Norfolk, VA; Fredericksburg, VA; Danville, VA;
Raleigh/Durham, NC; Wilmington, NC; Charlotte, NC; Greensboro, NC

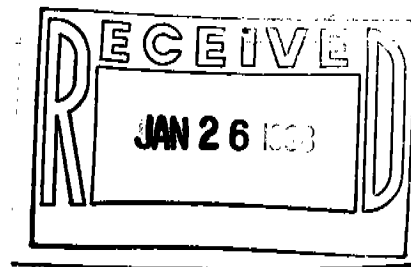


ENGINEERING CONSULTING SERVICES, LTD.
Geotechnical • Construction Materials • Environmental

January 14, 1998

Mr. Bill Shaw
Piedmont Triad Airport Authority
P.O. Box 35445
Greensboro, North Carolina 27425

Subject: **Underground Storage Tank Closure Report
Longview Golf Course
6321 Ballinger Road
Greensboro, North Carolina
ECS Project G-1861**



Dear Mr. Shaw:

As authorized by your acceptance of our Proposal 0864-P dated October 7, 1997, Engineering Consulting Services, Ltd. (ECS) has completed the underground storage tank (UST) closure report for one 1,000 gallon gasoline UST at the subject site. Included in this report is a description of the field activities, the results obtained, and our conclusions and recommendations.

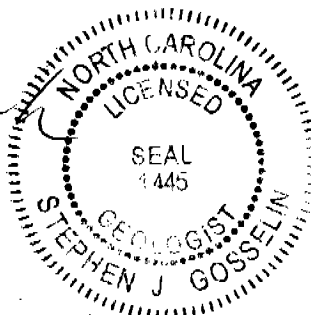
ECS appreciates the opportunity to provide our environmental consulting services to you on this project. If you have any questions concerning this report or this project, please contact us at 910-856-7150.

Sincerely,

ENGINEERING CONSULTING SERVICES, LTD.

Sania V. Werner
Project Geologist

Stephen J. Gosselin, L.G.
Principal Geologist
Licensed, NC#1445



Attachments

5-C Dundas Circle, Greensboro, NC 27407 • (910) 856-7150 • Fax (910) 856-7160

Offices: Washington, DC; Baltimore, MD; Frederick, MD; Richmond, VA; Norfolk, VA; Fredericksburg, VA; Danville, VA;
Raleigh/Durham, NC; Wilmington, NC; Charlotte, NC; Greensboro, NC

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III. SITE INVESTIGATION.....	4
IV. CONCLUSIONS AND RECOMMENDATIONS	4

FIGURES

Figure 1 - Site Location Map

Figure 2 - Site Plan

APPENDIX

Form GW/UST-3

Form GW/UST-2

Tank Disposal Manifest

Laboratory Data and Chain of Custody Records

Longview Golf Course
ECS Project G-1861
January 14, 1998

I. GENERAL INFORMATION

The subject site is the Longview Golf Course located at 6321 Ballinger Road in Greensboro, Guilford County, North Carolina (Figure 1). Information regarding site ownership, facility information, project contacts, underground storage tank (UST) information, and characteristics of the site is presented below:

A. Ownership of USTs

Piedmont Triad Airport Authority
6415 Airport Parkway, Suite 1
Greensboro, North Carolina 27409
(336) 665-5600

B. Facility Information

Longview Golf Course
6321 Ballinger Road
Greensboro, Guilford County, North Carolina 27410

C. Contacts

Primary Contact:	Mr. Bill Shaw Piedmont Triad Airport Authority 6415 Airport Parkway, Suite 1 Greensboro, North Carolina 27409 (336) 665-5600
Closure Contractor:	A&D Environmental and Industrial Services P.O. Box 484 High Point, North Carolina 27261 (336) 434-7750
Primary Consultant:	Engineering Consulting Services, Ltd. 5-C Dundas Circle Greensboro, North Carolina 27407 (336) 856-7150
Laboratory:	Paradigm Analytical Laboratories, Inc. 2627 Northchase Parkway SE Wilmington, North Carolina 28405 North Carolina Certification Number 481

Longview Golf Course
ECS Project G-1861
January 14, 1998

D. UST Information

Tank Number	Installation Date	Size	Tank Dimensions	Last Contents	Previous Contents
1	unknown	1,000 gallons	4 feet x 12 feet	Gasoline	None

E. Site Characteristics

The subject site is the Longview Golf Course located at 6321 Ballinger Road in Greensboro, North Carolina (Figure 1). One 1,000 gallon UST was used to store gasoline for use on site. The areas surrounding the site include residential development and undeveloped partially wooded areas. A water supply well supplies potable water for use on site. The residences to the east of the site are served by the municipal water supply. The nearest surface water feature is Horsepen Creek which crosses the northern portion of the site (Figure 1).

The site is located in the Piedmont Physiographic Province. The rock which underlies the site includes granitic rock of the Carolina Slate Belt unit. The virgin soils encountered in this area are the residual product of in-place chemical weathering of rock which was similar to the rock presently underlying the site. The soil weathering is more advanced near the surface, grading with depth to less weathered rock and finally bedrock. In this geologic setting, ground-water flow is generally a subdued replica of the surface topography and flows toward drainage features which have eroded deeply enough to intersect the ground-water level and act as a discharge point. The natural ground-water flow direction can be affected by pumping from high capacity wells and permanent or temporary dewatering systems. Based on the topographic map of the site vicinity, ground water at the site appears to flow to the north and east toward Horsepen Creek and a tributary (Figure 1).

II. CLOSURE PROCEDURES

UST Removal Activities

Utilities at the site were located by ULOCO prior to UST removal activities. UST removal activities were performed by A&D Environmental and Industrial Services (A&D) of High Point, North Carolina.

*Longview Golf Course
ECS Project G-1861
January 14, 1998*

On December 15, 1997, A&D removed approximately 60 gallons of product from the UST, and relocated it to a newly installed 500 gallon above ground tank storage tank (AST) at the site. After completion of product removal, a backhoe was used to perform the UST excavation activities. The grass and soil covering the USTs were removed to expose the top of the UST. Prior to excavation, the level of explosive vapors in the UST was checked using a combustible gas indicator. The level was less than 10 percent of the lower explosive limit (LEL). The UST was excavated and removed from the ground and appeared to be in good condition. The UST was transported to A&D's facility in High Point for disposal. A copy of the tank disposal manifest is included in the Appendix.

The top of the UST was approximately 3.5 feet below the ground surface. The final excavation was approximately 15 feet long, 7.5 feet wide and 8 feet deep. The soil in the UST excavation consisted of tan to brown clayey silt to the base of the excavation. The excavated soils along with additional clean fill were placed back in the excavation on December 16.

No water was encountered in the UST excavation. Soil samples were collected from beneath each end of the UST (SS-1 and SS-2), beneath the product piping (SS-3), and beneath the former location of the fuel pump dispenser (SS-4). Soil samples SS-1 and SS-3 were collected approximately 1 foot below the base of the UST excavation at a depth of 9 feet below grade. Soil samples SS-3 and SS-4 were collected at approximately 1 foot beneath the product piping and fuel pump dispenser at depths of 3 feet and 1 foot, respectively. The soil samples were screened for volatile organic compounds (VOCs) in the field using a RAE Photoionization Detector (PID). Details of the field procedures are discussed in Section III.

The soil samples were shipped to Paradigm Analytical Laboratories (PAL) in Wilmington, North Carolina and analyzed for volatile total petroleum hydrocarbon (TPH) concentrations using EPA Method 5030/8015M. The laboratory data sheets are included in the Appendix.

III. SITE INVESTIGATION

Sample Collection Procedures

The soil samples collected from beneath the former UST, the product piping and fuel pump dispenser were manually collected from the bucket of the backhoe using new, disposable latex gloves. The soil samples were placed into new 4-ounce capacity clean glass containers. After being filled, the sample containers were labeled with the project name and number, the time and date of sample collection, the analyses to be performed, and the absence or presence of preservative. The filled sample containers were placed into a cooler. Plastic bags containing ice were packed around the sample containers in the cooler to maintain the samples at approximately 4° Centigrade. The samples were shipped to Paradigm Analytical Laboratories, Inc. for analysis. The Chain of Custody was maintained as documented in the Appendix.

PID Screening

A representative portion of each soil sample was placed into a plastic zip-lock bag and placed in a warm location. Approximately 10 minutes after the time of collection, the bag was opened slightly and the probe of a RAE PID was inserted. The meter of the PID was monitored and the reading recorded. No readings were detected on the PID meter.

Laboratory Analytical Results

Laboratory analysis detected no volatile concentrations in the samples. The laboratory data sheets and Chain of Custody are included in the Appendix.

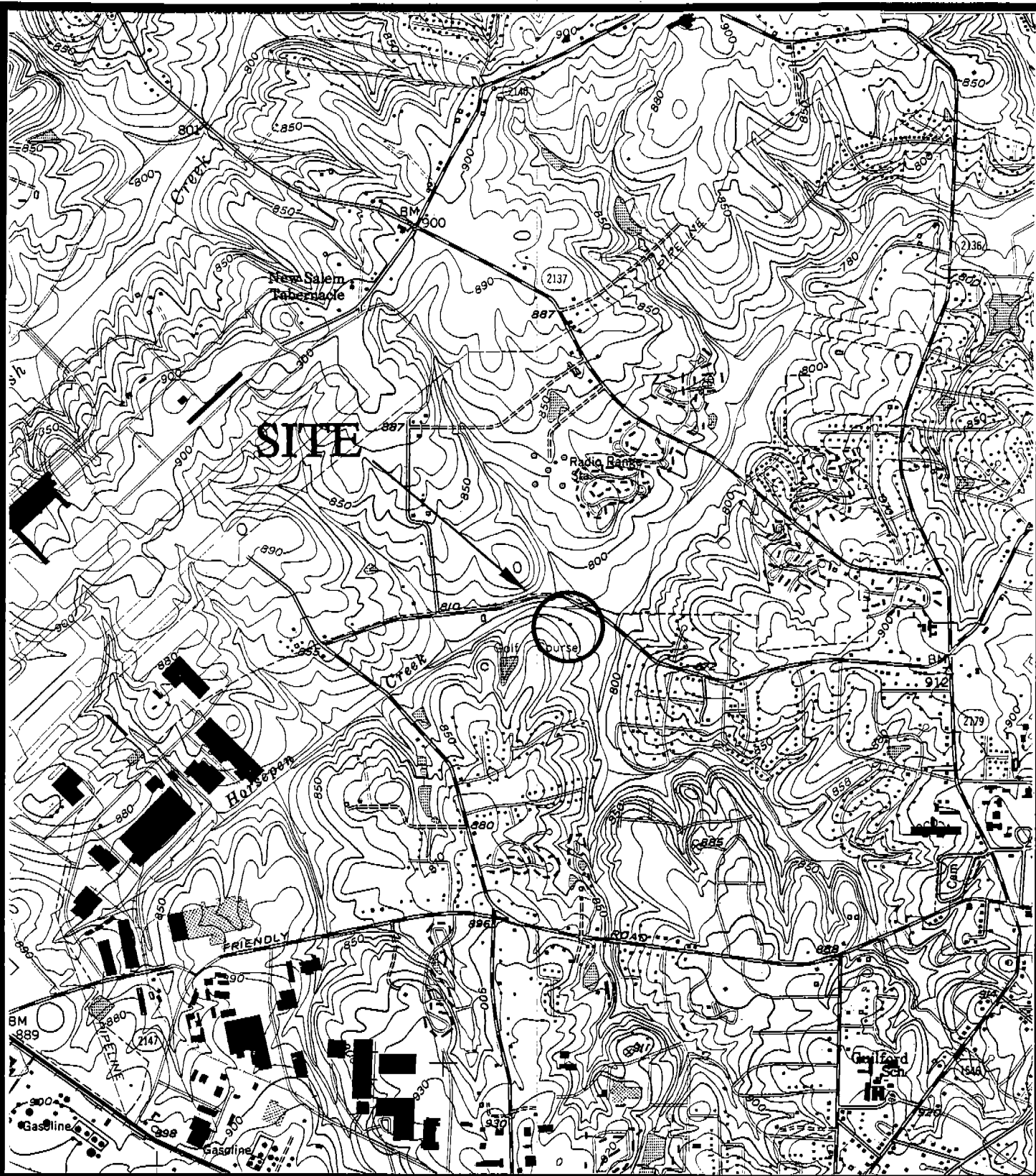
IV. CONCLUSIONS AND RECOMMENDATIONS

Based on laboratory analysis, no volatile total petroleum hydrocarbons (TPH) were detected in the confirmation samples collected. No further assessment of this UST is recommended at this time.

*Longview Golf Course
ECS Project G-1861
January 14, 1998*

The activities and evaluative approaches used in this assessment are consistent with those normally employed in hydrogeological assessments and remediation projects of this type. Our evaluation of site conditions has been based on our understanding of the project information and the data obtained during our field activities.

FIGURES



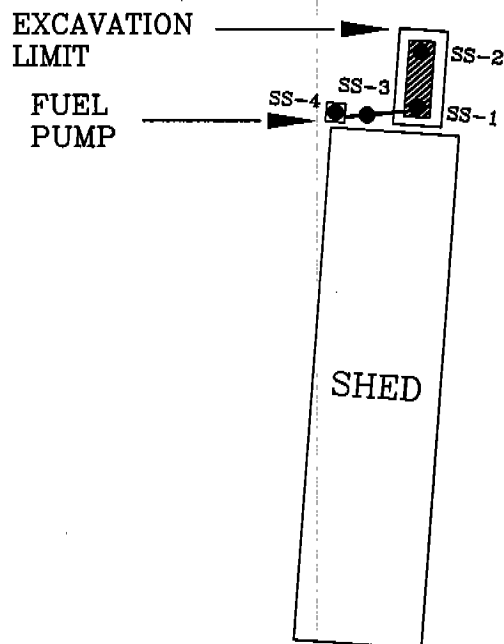
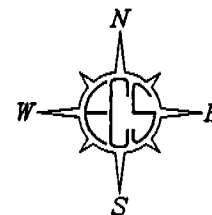
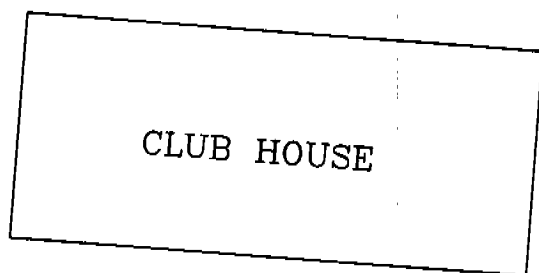
SOURCE:
USGS TOPOGRAPHIC MAP
GUILFORD, NC QUADRANGLE
DATED 1951, REVISED 1994

SCALE: 1" = 2000'

ECS LTD
ENGINEERING
CONSULTING
SERVICES LTD

FIGURE 1
SITE LOCATION MAP
LONGVIEW GOLF COURSE
6321 BALLINGER ROAD
GREENSBORO, NC

ECS PROJECT G-1861



SCALE (IN FEET)



- PRODUCT PIPING
- ▨ FORMER UST LOCATION
- APPROXIMATE SOIL SAMPLE LOCATION

REFERENCE:

SITE PLAN PREPARED BY
SOUTHERN MAPPING AND
ENGINEERING COMPANY DATED
JANUARY 16, 1991 AND FIELD
NOTES BY ECS PERSONNEL



SITE PLAN
LONGVIEW GOLF COURSE
6321 BALLINGER ROAD
GREENSBORO, NORTH CAROLINA

APPENDIX

FOR
TANKS
IN
NC

Return Completed Form To:

The appropriate DEM Regional Office according to the county of the facility's location. [SEE REVERSE SIDE OF OWNER'S COPY (PINK) FOR REGIONAL OFFICE ADDRESS].

State Use Only

I. D. Number _____

Date Received _____

INSTRUCTIONS

Complete and return five (5) working days prior to closure or change-in-service.

I. OWNERSHIP OF TANK(S)

Tank Owner Name: Piedmont Triad Airport Authority

(Corporation, Individual, Public Agency, or Other Entity)

Street Address: 6415 Airport Pkwy, Ste 1County: GuilfordCity: Greensboro State: NC Zip Code: 27409Tele. No. (Area Code): 910-665-5600

II. LOCATION OF TANK(S)

Facility Name or Company: Longview Golf Course

Facility ID # (if available): _____

Street Address or State Road: 6321 Ballinger RdCounty: Guilford City: Greensboro Zip Code: 27410Tele. No. (Area Code): (910) 294-4018

III. CONTACT PERSON

Name: Bill Shaw

Job Title: _____

Telephone Number: (910) 665-5600

IV. TANK REMOVAL, CLOSURE IN PLACE, CHANGE-IN-SERVICE

- Contact Local Fire Marshall.
- Plan the entire closure event.
- Conduct Site Soil Assessments.
- If Removing Tanks or Closing in Place refer to API Publications 2015 "Cleaning Petroleum Storage Tanks" & 1604 "Removal & Disposal of Used

- Underground Petroleum Storage Tanks".
- Provide a sketch locating piping, tanks and soil sampling locations.
- Fill out form GW/UST-2 "Site Investigation Report for Permanent Closure" and return within 30 days following the site investigation.

- The site assessment portion of the tank closure must be conducted under the supervision of a Professional Engineer or Licensed Geologist. After January 1, 1994, all closure site assessment reports must be signed and sealed by a P.E. or L.G.
- Keep closure records for 3 years.

V. WORK TO BE PERFORMED BY:

Contractor Name: A & D Environmental and Industrial ServicesAddress: P.O. Box 484, High Point State: NC Zip Code: 27261Contact: Jerry Stanley Phone: (910) 434-7750Primary Consultant: Sania Werner, ECS, Ltd. Phone: (910) 856-7150

VI. TANK(S) SCHEDULED FOR CLOSURE OR CHANGE-IN-SERVICE

TANK ID#	TANK CAPACITY	LAST CONTENTS	PROPOSED ACTIVITY		
			CLOSURE		CHANGE-IN-SERVICE
			Removal	Abandonment In Place	New Contents Stored
1	1,000	gasoline	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
			<input type="checkbox"/>	<input type="checkbox"/>	
			<input type="checkbox"/>	<input type="checkbox"/>	
			<input type="checkbox"/>	<input type="checkbox"/>	
			<input type="checkbox"/>	<input type="checkbox"/>	
			<input type="checkbox"/>	<input type="checkbox"/>	
			<input type="checkbox"/>	<input type="checkbox"/>	
			<input type="checkbox"/>	<input type="checkbox"/>	
			<input type="checkbox"/>	<input type="checkbox"/>	

VII. OWNER OR OWNER'S AUTHORIZED REPRESENTATIVE

Print name and official title

Sania V. Werner, Project Geologist*Scheduled Removal Date: 12/97Signature: *Sania V. Werner*Date Submitted: 11/21/97

If scheduled work date changes, notify your appropriate DEM Regional Office 48 hours prior to originally scheduled date.

FOR
TANKS
IN
NC

Return Completed Form To:

The appropriate DEM Regional Office according to the county of the facility's location.
[SEE MAP ON REVERSE SIDE OF OWNER'S COPY (PINK) FOR REGIONAL
OFFICE ADDRESS].

State Use Only

I.D. Number _____

Date Received _____

INSTRUCTIONS

Complete and return within (30) days following completion of site investigation.

I. Ownership of Tank(s)

Owner Name: Piedmont Triad Airport Authority

(Corporation, Individual, Public Agency, or Other Entity)

Street Address: 6415 Airport Pkwy, Suite 1County: GuilfordCity: Greensboro State: NC Zip Code: 27409Telephone Number: (336) 665-5600

(Area Code)

II. Location of Tank(s)

Facility Name: Longview Golf Course

(or Company)

Facility ID # (if available): _____

Street Address: 6321 Ballinger Road

(or State Road)

County: Guilford City: Greensboro Zip Code: 27410Telephone Number: (336) 294-4018

(Area Code)

III. Contact Person

Name: Bill Shaw

Job Title: _____

Tel. No.: 336-665-5600Closure Contractor: A&D EnvironmentalAddress: P.O. Box 484, High Point, NC 27261 Tel. No.: 336-434-7750Primary Consultant: ECS, Ltd.Address: 5-C Dundas Greensboro, NC 27407 Tel. No.: 336-856-7150Lab: Paradigm Analytical LabsAddress: 2627 Northchase Pkwy, Wilmington, NC Tel. No.: 910-350-1903

IV. U.S.T. Information

V. Excavation Condition

VI. Additional Information Required

Tank No.	Size in Gallons	Tank Dimensions	Last Contents	Water in Excavation		Free Product		Notable Odor or Visible Soil Contamination	
				Yes	No	Yes	No	Yes	No
1	1,000	4 ft x 12 ft	Gasoline		X		X		X

See reverse side of pink copy (owner's copy) for additional information required by N.C. - DEM in the written report and sketch.

NOTE: The site assessment portion of the tank closure must be conducted under the supervision of a Professional Engineer or Licensed Geologist. After Jan. 1, 1994, all closure site assessment reports must be signed and sealed by a P.E. or L.G.

VII. Check List (Check the activities completed)

PERMANENT CLOSURE (For Removing or Abandoning-in-place)

- ☒ Contact local fire marshal.
☒ Notify DEM Regional Office before abandonment.
☒ Drain & flush piping into tank.
☒ Remove all product and residuals from tank.
☒ Excavate down to tank.
☒ Clean and inspect tank.
☒ Remove drop tube, fill pipe, gauge pipe, vapor recovery tank connections, submersible pumps and other tank fixtures.
☒ Cap or plug all lines except the vent and fill lines.
☒ Purge tank of all product & flammable vapors.
☒ Cut one or more large holes in the tanks.
☒ Backfill the area.
 Date Tank(s) Permanently closed: 12/15/97
 Date of Change-in-Service: _____

ABANDONMENT IN PLACE

- ☐ Fill tank until material overflows tank opening.
☐ Plug or cap all openings.
☐ Disconnect and cap or remove vent line.
☐ Solid inert material used - specify: _____

REMOVAL

- ☐ Create vent hole.
☒ Label tank.
☒ Dispose of tank in approved manner.
 Final tank destination: _____

A&D Environmental and Industrial Sys.

VIII. Certification (Read and Sign)

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this and all attached documents, and that based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the submitted information is true, accurate, and complete.

Print name and official title of owner or owner's authorized representative

Signature

Date Signed

Sania V Werner, Project GeologistSania V Werner1/14/98



Environmental and Industrial Services

P. O. Box 484 • High Point, NC • Phone (910) 434-7750 • FAX (910) 434-7752

TANK DISPOSAL MANIFEST

1) Tank Owner/Authorized Representative: Name and Mailing Address _____

PEIDMONT TRIAD AIRPORT AUTHORITY
LONGVIEW GOLF COURSE 1321 BALLINGER RD. GREENSBORO, N.C.

2) Tank Owner/Authorized Representative: Contact _____

ECS - SANIA WERNER
Phone#: 336-856-7150

3) Description Of Tanks:

<u>Tank No.</u>	<u>Capacity</u>	<u>Previous Contents</u>	<u>Comments</u>
<u>1</u>	<u>1000 GAL</u>	<u>GASOLINE</u>	<u>Good Conditions</u>

4) Tank Owner/Authorized Representative Certification: The undersigned certifies that the above listed storage tanks have been removed from the premises of the tank owner.

Printed/Typed Name

Signature

Month/Day/Year

5) Transporter: The undersigned certifies that the above listed storage tanks have been transported to A&D Environmental and Industrial Services, 2718 Uwharrie Road, Archdale, N.C. 27263.

GARY STANLEY
Printed/Typed Name

Signature

12-15-97
Month/Day/Year

6) Disposal Certification: The undersigned certifies that the above-named storage tank(s) have been cut into scrap pieces and accepted by the metal recycling facility.

Recycling Facility: D. H. GIFFIN WRECKING CO

JERRY STANLEY
Printed/Typed Name

Signature

12-20-97
Month/Day/Year

PARADIGM ANALYTICAL LABORATORIES, INC.

2627 Northchase Parkway S.E.
Wilmington, North Carolina 28405
(910) 350-1903
Fax (910) 350-1557

Ms. Sania Werner
ECS, LTD.
5-C Dundas Circle
Greensboro, NC 27407

Date 12-23-97

Report Number: G161-189

Client Project ID : PTAA/Ballinger RD.; G1861

Dear Ms. Werner:

Enclosed are the results of the analytical services performed under the referenced project. Copies of this report and supporting data will be retained in our files for a period of five years in the event they are required for future reference. Any samples submitted to our laboratory will be retained for a maximum of thirty (30) days from date of this report unless other arrangements are requested.

If there are any questions about the report or the services performed during this project, please call for assistance. We will be happy to answer any questions or concerns which you may have.

Thank you for using Paradigm Analytical Labs for your analytical service projects. We look forward to working with you again on any additional needs which you may have.

Sincerely,

Paradigm Analytical Laboratories



Laboratory Director
Mark Randall

PARADIGM ANALYTICAL LABORATORIES, INC.

Results for Total Petroleum
Hydrocarbons
by GC

Client Sample ID: SS1
Client Project ID: PTAA/Ballinger Rd.
Lab Sample ID: 34117
Lab Project ID: G161-189
Matrix: Soil

Date Collected: 12/15/97
Date Received: 12/16/97
Analyzed By: JPW
%Solids: 81.7

Compound	Result (MG/KG)	Quantitation Limit	Method	Dilution Factor	Date Analyzed
Gasoline	BQL	7.6	5030	1.0	12/20/97

Comments:

Quantitation Limits are fully calculated using dilution factors and % solids.
BQL = Undetected or below quantitation limit.

Reviewed By: JPW

PARADIGM ANALYTICAL LABORATORIES, INC.

Results for Total Petroleum
Hydrocarbons
by GC

Client Sample ID:	SS2	Date Collected:	12/15/97
Client Project ID:	PTAA/Ballinger Rd.	Date Received:	12/16/97
Lab Sample ID:	34118	Analyzed By:	JPW
Lab Project ID:	G161-189	%Solids:	82.5
Matrix:	Soil		

Compound	Result (MG/KG)	Quantitation Limit	Method	Dilution Factor	Date Analyzed
Gasoline	BQL	7.6	5030	1.0	12/20/97

Comments:

Quantitation Limits are fully calculated using dilution factors and % solids.
BQL = Undetected or below quantitation limit.

Reviewed By: PNV

PARADIGM ANALYTICAL LABORATORIES, INC.

Results for Total Petroleum
Hydrocarbons
by GC

Client Sample ID:	SS3	Date Collected:	12/15/97
Client Project ID:	PTAA/Ballinger Rd.	Date Received:	12/16/97
Lab Sample ID:	34119	Analyzed By:	JPW
Lab Project ID:	G161-189	%Solids:	78.2
Matrix:	Soil		

Compound	Result (MG/KG)	Quantitation Limit	Method	Dilution Factor	Date Analyzed
Gasoline	BQL	8.0	5030	1.0	12/20/97

Comments:

Quantitation Limits are fully calculated using dilution factors and % solids.
BQL = Undetected or below quantitation limit.

Reviewed By: JPW

PARADIGM ANALYTICAL LABORATORIES, INC.

Results for Total Petroleum
Hydrocarbons
by GC

Client Sample ID:	SS4	Date Collected:	12/15/97
Client Project ID:	PTAA/Ballinger Rd.	Date Received:	12/16/97
Lab Sample ID:	34120	Analyzed By:	JPW
Lab Project ID:	G161-189	%Solids:	79.7
Matrix:	Soil		

Compound	Result (MG/KG)	Quantitation Limit	Method	Dilution Factor	Date Analyzed
Gasoline	BQL	7.8	5030	1.0	12/22/97

Comments:

Quantitation Limits are fully calculated using dilution factors and % solids.
BQL = Undetected or below quantitation limit.

Reviewed By: BNV